# PAN AMERICAN fisherman

APRIL
1955

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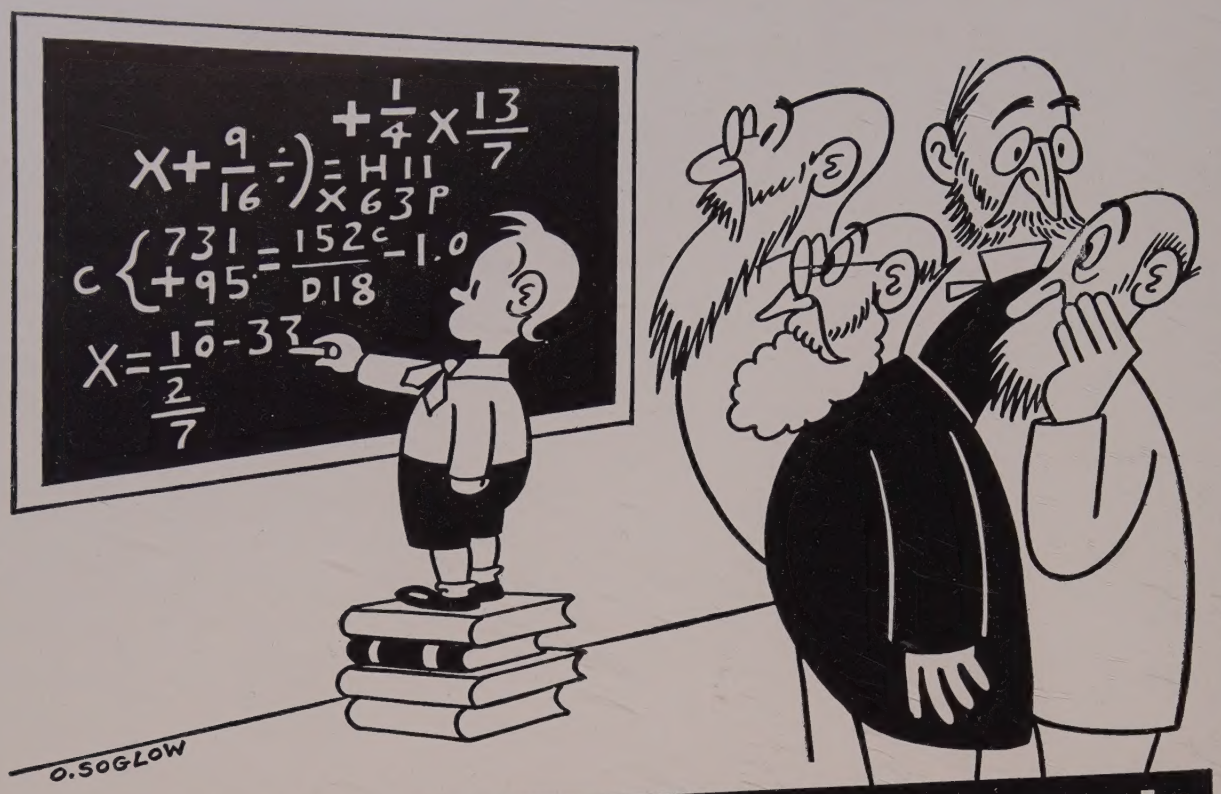


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*Getting the Facts on . . .*

# THE STURGEON

EXCITEMENT runs high in San Pablo Bay (a few miles to the north of San Francisco) when the sturgeon are jumping. Fish five and six feet long, dozens of them, shooting straight out of the water.

What do they jump for? Food, or play, or have they just come up to laugh at the poor fisherman, who has yet to discover a satisfactory bait to catch them on?

No one knows. But this is just one of the many unknown things about California's sturgeon, legalized as a game fish for the first time this year after almost four decades of strict protection.

**Tagging Study**

To get some of the basic facts that will be needed to keep this new sport fishery on an even keel, the Department of Fish and Game has assigned Biologist Richard L. Pycha to tag some of the piscatorial monsters in the Sacramento-San Joaquin Delta area, which seems to be the State's principal sturgeon grounds.

The sturgeon study is part of a Dingell-Johnson Act federal-aid project. Three-quarters of the cost of such projects is paid for by the U.S. government with funds derived from the federal tax on fishing tackle.

So far Pycha and netman Vince Catania have netted, tagged, and returned to the water about 450 sturgeon, ranging in size from 30 to 93 inches. Pycha plans to tag at least 1,000. Four tagged fish have been recovered. When more tags begin to come in from anglers and Pycha's own operations, estimates can be worked out on how many sturgeon are in the bay, and how large a percentage of them are being caught.

Tag returns will also reveal much about sturgeon movements up and down the Sacramento-San Joaquin River system. Comparison of measurements of recaptured fish will show how fast sturgeon grow.

All this information will help the department decide whether the present year-round season with its 40-inch size limit and bag limit of one fish per day is giving adequate protection to the new sport fishery.

Pycha uses a net to catch his fish for tagging. But nets proved only too effective in the old days of overexploitation at the turn of the century, and are no longer legal gear for taking sturgeon.

How, then, does the ordinary sports angler, restricted by law to fishing "with hook and line . . . in such manner that the fish voluntarily takes the bait or lure in its mouth," go about catching one of these monsters?

**Types of Bait**

Regular striped bass rigs, with a sardine fillet for bait, have taken a few sturgeon for striper fishermen in the delta area. Other standard baits have brought occasional success, and so have some unorthodox ones. One authority has even recommended chicken entrails.

Up in Oregon, on the Columbia River, where the sturgeon has been a legal game fish for a long time, the master anglers use chunks of dead salmon for bait. Sometimes they hold the salmon in a bucket of water for a week or so, to age it more delectably.

**Big Hooks**

The bait is put on a big No. 13 hook, and wrapped with thread to keep it secure. A line of 100-pound test cable is often used, with rod and reel to match. (This sounds a little heavy, but one of the fish Pycha netted in San Pablo Bay was trailing a hook, line, rod and reel pulled right out of some angler's hands.)

Whether California sturgeon will respond to the Oregon approach remains to be seen. Possibly other baits will be better. Pycha has opened up a few California sturgeon stomachs given him by anglers, and found the finny giants to be feeding on the shrimp that abound on the delta's muddy bottom, and on tiny "pinhead" and "fingernail" clams.

Sturgeon fishing, after all, is still largely a matter of unknowns.

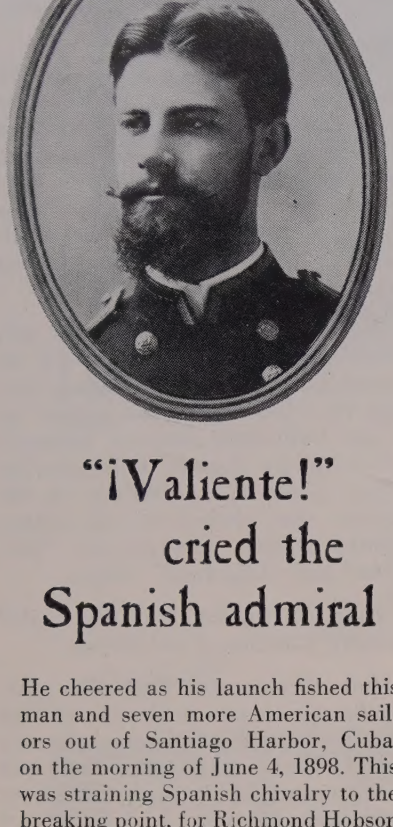
But there's one fact for sure, Pycha says as he wrestles the six-foot fish in the well of the department's small research boat: when you catch a sturgeon, you've caught a lot of fish. *

## California Canned Tuna Pack Sets Record

About 9,250,000 cases of canned tuna were processed in California canneries during 1954. This breaks all previous records for tuna receipts and case pack. As compared with the previous record year of 1953, when 8,278,700 standard cases (48 No. ½ cans) were packed in California, the 1954 pack indicates an increase of 972,000 cases, or 12%.

Total fresh and frozen tuna receipts by California canners of approximately 206,000 tons also set a new record, and represented an increase of approximately 15,000 tons or 8% as compared with the previous record receipts established in 1950 when 191,500 tons of tuna were received in California for processing.

Imports of frozen tuna in California during 1954 accounted for about 45,000 tons of the total receipts, as compared with 1950 imports of only 8,200 tons.



# "¡Valiente!" cried the Spanish admiral

He cheered as his launch fished this man and seven more American sailors out of Santiago Harbor, Cuba, on the morning of June 4, 1898. This was straining Spanish chivalry to the breaking point, for Richmond Hobson (above) and his little suicide crew had spent the previous night taking a ship into the harbor entrance under a hail of cannonade and deliberately sinking her to bottle up the Spanish fleet.

Hobson's cool-headed daring made him as much a hero of the day as Admiral Dewey. And proved again that America's most valuable product is Americans.

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# New Tuna Prices Set

A price agreement was reached in San Diego on March 30, ending a shutdown of almost two months at the Westgate-California Tuna Packing Co. and general disorder in the tuna industry since late last November. It is expected that the settlement will establish a pattern for other canneries.

Here is the basis of the new agreement: Vessels which have been in port waiting to unload their catches, as well as ships now at sea, will receive $320 a ton for yellowfin tuna and $280 a ton for skipjack. Boats leaving for sea after March 30 will be paid $310 a ton for yellowfin and $270 for skipjack on their return.

The new prices represent an over-all reduction of $40 a ton for yellowfin and $60 for skipjack under the prices in effect at this time last year. Later in 1954, however, canneries cut their rate of pay to $330 for yellowfin and $310 for skipjack. The cannery owners said these price reductions were necessary due to excessive inventories occasioned in part by competition from Japanese sources.

The 600 Westgate-California employees who have been out of work for weeks now are assured steady employment for an indefinite period as a result of this.

The cannery immediately began unloading 900 tons from the refrigeration mother ship *Puerto del Sol* which had brought tuna from a freezer plant in Peru served by American vessels. Also being unloaded immediately was the San Diego clipper *Cabrillo* which had 345 tons; this vessel is one of the two new ones just launched last November by the Soares brothers. Other waiting vessels will be unloaded as rapidly as possible and return to fishing.

# Do Atomic Explosions Affect Canned Tuna?

The safety of canned foods in both tin and glass containers, under the emergency situation of an atomic explosion, is soon to be officially and scientifically tested, it was stated by George B. Morrill, Jr., President of the National Canners Association, speaking before a meeting of Southern California canners in Long Beach.

Joint planning has been under way for several months by a committee consisting of representatives of food canners and the tin and glass container organizations for a series of explosion-condition tests under sponsorship of the Federal Civil Defense Administration, to be carried out at the Nevada Test Site during the current 1955 series of continental nuclear tests, Mr. Morrill stated.

In the pre-atomic World War II bombings of European cities canned foods frequently became the only source of food and drink for unevacuated populations whose public utilities (power and refrigeration) and distribution systems had been disrupted. In recent years, laboratory findings have attested the protective values of canned foods and their containers under conditions of atomic, biological and chemical warfare, and Civil Defense literature recommends their use for emergency feeding.

The canned foods tests now planned, however, will be the first ever conducted under an actual atomic explosion situation and would lead to findings not possible under laboratory conditions. The value of the experiments, said Mr. Morrill, will be to determine whether canned foods in tin and glass can be used safely under such extreme emergency. Tests will be made of approximately 25,000 samples of about 60 different canned foods items, selected on the basis of largest volume used by consumers.

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## TABLE OF CONTENTS


| | PAGE |
|---|---|
| Facts on the Sturgeon | 3 |
| New Tuna Prices Set | 4 |
| Foreign Fishery Developments | 6 |
| Report from Washington, D. C. | 7 |
| The Publisher's Page | 9 |
| Along the San Diego Waterfront | 10 |
| The Sablefish Fishery | 12 |
| Ebb 'n Flow | 14 |
| Tides of the Industry | 15 |
| Fishery Products Output | 17 |
| POFI Research Activities | 18 |
| Tuna in the South Pacific | 23 |
| The Globe | 24 |


## *About This Issue . . .*

Biggest development in tuna circles the past month was the settlement of the price situation in San Diego. It puts people back at work there and it also sets a pattern for the entire industry. Details on page 4.

*

In last month's issue we told (on page 20) about efforts of the American Tunaboat Association to raise funds to buy the idle Van Camp cannery in San Diego. It was a noble effort but required the raising of about $400,000. At the halfway mark the tuna interests threw in the sponge. They couldn't meet the deadline and the former cannery structure was bought by trucking interests and will be used as a warehouse and freight terminal.

*

Research activities of POFI are covered on pages 18 and 19; then there's a little different slant in the story "Tuna in the South Pacific" on page 23.

*

The usual variety of items of general interest will be found in "The Globe" on page 24; and in "Ebb 'n Flow," page 14.


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# Foreign Fishery Developments

A dispatch from the American Embassy in Tokyo reports that with a marked increase in salmon fleets which would be licensed by Japan for the 1955 season, the catch of salmon is expected to be considerably above that of 1954, and the production of canned salmon is estimated at 1,200,000 cases (96 8-oz.), of which 1,000,000 cases will be produced on board ship and 200,000 cases on shore. It is expected that the floating facilities for canning will be four or five times those available in 1954. The dispatch also states:

"Exports are hoped to be between 700,000 and 800,000 cases at f.o.b. prices approximating the following: Sockeye $30, pink $18.50, silver $24. Presumably the great preponderance of the exports will go to the sterling area, as in 1954."

Another dispatch from the American Embassy in Tokyo reports that two new salmon cannery ships now are being built, one of 7,400 gross tons and the other 5,700 gross tons, each with two canning lines.

A total of nine old cargo vessels are being converted to canneries. These vessels range from 4,800 to 12,336 gross tons and were built from 1919 through 1932. When conversion is completed, their canning lines will total 17. The cannery ships presumably are for use in connection with the increased number of salmon-trout and crab fleets planned for the 1955 season.

## Tagging Petrale Sole

The U.S. Fish and Wildlife Service's exploratory fishing vessel *John N. Cobb* left Seattle March 21 on an expedition to tag petrale sole in the "Esteban Deep" off the West Coast of Vancouver Island. The operation will be carried out in cooperation with the State of Washington Department of Fisheries and the Fisheries Research Board of Canada.

Standard western otter trawls will be used to catch the petrale sole, and special techniques and gear will b employed in an attempt to reduce th high mortality rate experienced i previous tagging operations by th State in the "Esteban Deep." Th high mortality was thought to hav been the result of extreme pressur changes on the petrale sole as the were brought up from depths as grea as 1,200 feet.

Catches of petrale sole, a mos highly prized bottom fish, have dwin dled on both Canadian and Unite States grounds in recent years. Th "Esteban Deep" petrale sole ground discovered accidentally in 1953 b American trawlers fishing for Pacifi ocean perch, has produced the larg est catches of petrale sole ever take in the history of the Washingto trawl fishery. Fishermen and scien tists alike believe that the petrale sol taken in "Esteban Deep" are a par of the same stocks which are fishe in other areas during the summe months. This opinion is based o results of previous tagging by Wash ington State and Canada. The work carried out by the *John N. Cobb* will help to determine the necessity of giving the species regulatory protec tion.


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# Report from Washington

## *Gleaned from the Nation's Capital by John Harms*

TUNA IMPORT FIGHT.--The battle to get more protection for the domestic tuna industry against Japanese imports continues. Harold Carey of the American Tunaboat Association has become a familiar face and name to congressional committees dealing with fishery problems, around the Tariff Commission and other government agencies.

Congress and the government are being urged to wake up to the importance of keeping a strong tuna industry in the United States, and setting up the necessary protective measures. The lion's share of the credit for any success these measures meet must be handed to the indefatigable tuna leaders from California.

--o--

LATEST SALVO.--Through the efforts of these men the story of tuna industry's battle against excessive Japanese imports was spread across the Congressional Record.

Harold Carey, in his program to keep Congress posted on the status of the industry, wrote a letter to California Representative Bob Wilson. Wilson inserted this into the Record which every congressman and senator makes it his business to read carefully.

Wilson added: "The hard-hit tuna industry, which has been imperiled by a flood of imported frozen tuna, has just received disconcerting reports that Japanese interests are now planning to flood the country with tuna packed in brine." Wilson went on to say it was his understanding that the Administration does not intend to let established domestic industries "go down the drain because of foreign competition--yet this danger exists today unless official steps are taken immediately to protect this vital food-producing industry."

--o--

THE FACTS.--Here is a summary of the report Mr. Carey sent to Representative Wilson, which was put in the Congressional Record:

For the first 7 weeks of 1955 domestic vessels have delivered 9,936 tons to Southern California canneries, compared with 20,369 tons during the same time in 1954. That's a decline in deliveries of 10,433 tons. At the same time, imported fish has shown "a completely opposite trend." In 1954, deliveries for the 7-week period were 2,453 tons, while this year they totaled 6,516 tons. Therefore, there is an increase of 4,063 tons in the amount of fish imported by Southern California canners.

In the aggregate, Mr. Carey points out, canneries have received 6,370 tons less than the comparable period of a year ago--although that reduction of fish purchases by them embraces an increase of 4,063 tons in imported fish and a decrease of 10,443 tons in fish bought from domestic vessels.

Mr. Carey says that the decline can't be blamed on "a necessity to purchase abroad in order to supplement supplies." At the time the letter was written, in mid-March, Mr. Carey reported that tunaboats in the ports of San Diego and San Pedro held between 8,500 and 9,000 tons of tuna "awaiting purchase."

Latest reports from Japan, Mr. Carey said show the Jap tuna fleet to be growing--"with no end in sight." He said that more recent Japanese Fisheries Agency figures indicate that for vessels ranging from 101 gross tons upward (from about 50 tons carrying capacity and upward) there have been 31 wooden vessels added to the fleet, totaling 4,559 gross tons, and there have been 17 steel vessels added to the fleet, totaling 6,746 tons. In November of 1954, it was reported that there were 30 large tuna vessels in the 300-500 gross-ton class now under construction in Japan."

According to this the Japanese tuna fleet is of roughly comparable size to our own, with a total of 436 vessels and 89,989 gross tons. Since December 31, 1941, we have declined a total of 42 vessels and something over 6,400 tons. The Japanese, in the meantime, have increased 164 vessels and something over 49,000 tons.

Mr. Carey declared: "If this represents any need for concession to Japan to stimulate her tuna industry, I would like to have that proved to me. If it demonstrates that our fleet is in a healthy condition, I would likewise like to have that demonstrated. I believe it appropriate that that question be asked of the Department of State and of the Trade Agreements Committee people."

Letters are being sent to President Eisenhower "and various others" pointing out these facts and again urging the necessity of concluding an agreement with Japan--even though it is informal in nature--which will cover this tuna situation."

--o--

JAPS DOING GOOD.--The State Department's idea for negotiating concessions for imports into the U.S. from Japan is based on the theory that we should do all we can to build up the Land of the Rising Sun as a major outpost against creeping communism. While this generally is accepted in Washington as a laudable purpose, many industry men are maintaining stoutly that concessions should not be granted where the Japs are doing pretty well on their own.

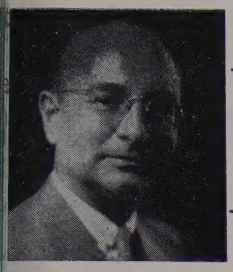
Take the Japanese fishing export business for an example. A recent U.S. embassy report from Tokyo says flatly that "the Japanese fisheries generally experienced a prosperous year in 1954." This apparently is particularly true of fish and fish-product exports.

The dispatch says that in respect to foreign trade in fish a "ready market was met for most products--squid and cuttlefish for Asiatic countries, salmon for sterling areas, and crabmeat for the United States all recorded increased volume of shipments."

Over-all exports of marine products for the year, based on 11-months data, were expected to amount to 140,000 metric tons, valued at about $75 million. This compares with 1953 shipments of 121,000 tons, declared as worth about $61 million in U.S. dollars.

The report goes on to say: "A substantial portion of this (Japa-

*(Continued on page 21)*



# The Publisher's Page

**The Continental Shelf.**—California has been having some excitement about the oil rights along its shore line. And California fishermen are having trouble with other countries because the latter are jealous of the wealth in and beneath the seas.

Besides the Central America and South America countries which have been giving our fishermen and boat owners a bad time, Australia also has laid claim to the entire continental shelf surrounding her territory, extending in some cases 200 miles beyond her shores. This is attributed to failure of negotiations with Japan over pearl-shell fishing in Australian coastal waters. South Korea also is attempting to control fishing within 60 miles of her coasts.

Such restrictions and disputes are likely to cause increasing friction as marine and underwater resources are developed. Recently the International Law Commission of the U.N. offered detailed recommendations for control of the continental shelf.

One of the proposals was for each country to have sovereign rights over the seabed and subsoil of the continental shelf for the purpose of exploring and exploiting natural resources. The continental shelf was defined as "the seabed and subsoil of marine areas" contiguous to the coasts extending out to a depth of 600 feet. Off our Atlantic coast this is said to mean an average distance of 73 miles; off the Pacific coast, 18 miles; in the Gulf of Mexico, 60 miles.

The water and air above the continental shelf and beyond the traditional three-mile limit would not be affected and would remain open to the commerce of all nations. It seems reasonable that every country should have the right to exploit its own continental shelf, and the 600-foot limit includes all the sea bottom that will be of any value in the foreseeable future.

Whether or not the above is the correct basis of agreement, certainly some steps in this direction should be taken soon on an international basis—before friction becomes more acute.

**What Knowland Knows.**—A man in Government we met and heard speak recently is the Hon. William F. Knowland, U.S. Senator from California and the present GOP leader in the Senate. Comparing the communists' long-range plans for world domination with their talks about peaceful intentions, Knowland made a pointed statement:

"What they have for us is the peaceful coexistence allowed to a Thanksgiving turkey—until Thanksgiving dinner."

President Eisenhower and Senator Knowland may disagree on certain methods but they agree on the basic one: the commies can't be trusted and there is no use trying to stage "peace talks" with them as long as they keep stirring up devilment in every corner of the globe.

We admire the strong desire for peace expressed by both Eisenhower and Churchill, and they deserve a fair chance to work things out gradually without major warfare. However, the way the Reds keep probing at Berlin, Formosa, Indo-China, and many other places, burns us up.

Sometimes we think the best way to achieve peace in our time would be to cancel those foolish secret agreements of Yalta, Teheran and Potsdam and tell both Russia and Red China exactly where to get off. Otherwise we may be the turkey that will some day get it in the neck —or in the back—whenever the Reds think that they have the tools to do the job.

**Growth of the West.**—A continuing source of wonderment to many people is the never-ending expansion of the Western States. Some crystal ball experts said the peak had been reached several years ago and would taper off, but every year simply adds new horizons and new peaks.

Here in Southern California, center of the most rapid development, we are quite cognizant of the spectacular growth of Western population and business, and the bright promise for even bigger things in the future as people and industry continue to head this way in a steady flow.

Now comes an unbiased Eastern research outfit with a prediction, based on a careful study of the 11 Western States, that the future growth here may be even more fantastic than the buildup already witnessed. People and industry are pouring in at a startling rate, changing the whole complexion of the United States.

The Southern California-Arizona area is setting the pace as the fastest growing section of the nation. Its population has increased nearly 1,500,000 for a gain of 21% since 1950. The Los Angeles metropolitan area has moved into third place, ahead of Philadelphia in population and ahead of Detroit in industrial employment, compared with ninth ranking before World War II. But that's not all:

The San Francisco Bay area has become the home base for seven corporations of over a billion dollars each. Utah has become the non-ferrous smelting center of the United States. Nevada boasts one of the two leading producers of titanium in the country. The whole Intermountain area is booming on account of uranium and oil and gas developments. The Pacific Northwest is developing power plants, timber and paper mills, and metalworking plants.

The West as a whole enjoys substantial leads in such important economic indicators as increase in total income, bank deposits, rate of increase in the number of motor vehicle registrations, number of telephones installed, electric energy production, and the value added by manufacturing plants. All this makes the fabled gold rush days of the old 49'ers look pretty puny.

**This Is the End.**—The many conventions we report remind us of the Idaho potato married to a California potato. In time they became the parents of a little girl. They named her Sweet. Eventually she grew up and told her parents she wished to marry Lowell Thomas.

"But you can't marry him," they exclaimed. "Why not?" "Because he's just a commentator!"

BRIANT SANDO

# The San Diego Waterfront

By ROBERT K. LAWSON

THE number of tuna clippers up in San Diego Harbor waiting to unload their catches has climbed steadily since the early fall of last year. Estimates place the number of vessels today as high as 55; other sources think the figure may be closer to 45. Averaged down the middle it probably involves in the neighborhood of 12,000 tons of frozen tuna aboard these vessels with a value to the fisherman of approximately three and one-half million dollars. Some relief for this situation came with the new price agreement—see page 4.

The San Diego Chamber of Commerce recently was jolted into recognition of the serious plight of the tuna industry. Harold Cary, general manager of the American Tunaboat Association, which represents virtually the entire San Diego fleet, addressed a Chamber group and revealed the loss of 35,000 tons of tuna landed here valued at some 11 million dollars.

Meanwhile the San Diego tuna fleet continues to decrease as Japanese imports to this country increase. San Pedro now packs about 56% of all tuna in the United States; San Diego plays second fiddle with about 31%, Cary stated.

Robert M. Golden, Chamber of Commerce president, said a special committee would be appointed to work with tuna industry leaders to study the situation. Presumably the Chamber action was precipitated by the closure of the Van Camp Sea Food Company plant here, which threw some 600 people out of work, plus daily newspaper accounts of the ever increasing number of tuna clippers tied up in the harbor.

The American Tunaboat Association announced early last month that the Japanese fishing industry had added nearly 100 vessels to their fleet during the period from July 1, 1954 to January 1, 1955. During the same period only two tuna clippers have been launched by the American fishing fleet.

Spokesmen for the shipyards back this statement, saying lack of normal business from the tuna fishing industry has virtually shut down their yards, and they must appeal to the government for contracts to keep in business.

* * * *

**Cannery Purchase Plans**

Boat owners, through the American Tunaboat Association, have been negotiating for the past two months to purchase either the West Coast Packing Company plant or the High Seas Packing plant in a cooperative merger to pack their catches.

Discussions have continued without apparent results and are still in progress, with only one new factor being revealed. Sources close to the picture recently disclosed that the California Freight Lines also are interested in acquiring the West Coast plant, and the American Tunaboat Association was expected to make a final offer.

Involved in the discussions was the San Diego Harbor Department, since the cannery properties are situated upon tidelands property under the administration of the Department. Final approval for sale to either the Freight Line or to the American Tunaboat Association group appeared near as we go to press.

Nearly all of the canning facilities and machinery had been removed from the West Coast plant by the owners, Van Camp Sea Food Company. Unofficial sources expressed the belief this equipment was shipped overseas to complement the firm's foreign operations. Confirmation of this statement could not be obtained.

* * * *

**The Sea Lark Sinks**

A 490-ton tuna cargo was lost with the sinking of the Sea Lark early last month, it was revealed by the operators, National Marine Terminal, San Diego. Estimated value of the cargo was in the neighborhood of $150,000. Value of the vessel, and percentage of insurance coverage was not divulged.

All 12 members of the crew, among which were three San Diegans, were removed from the Sea Lark's motor launch by an Ecuadorian vessel and put ashore at Tomac, Columbia. The San Diegans were identified as Fernando Median, captain; Hugh Latimer, engineer; and Arthur Yeend, observer for National Steel & Shipbuilding Corporation. Peruvian nationals made up the remainder of the crew.

The Sea Lark was described as enroute from Paita, Peru, to Ponce, Puerto Rico, when the sinking occurred. Details of the sinking were not available. The vessel fished for the Westgate California Tuna Packing Company, in San Diego.

* * * *

**Sun Voyager Suit**

A suit for damages involving $215,350 was filed early last month by three crew members aboard the Sun Voyager when this vessel capsized and sank off Central America on March 9, 1954. The crew members were Frank Mario, captain, Dahl V. Cook, engineer, and A. W. Diehl, fisherman.

The managing owner, Joaquin Theodore, and other owners were listed as defendents in the suit in Superior Court. The complainants maintained the vessel had more tanks

than could be safely filled at one time, and that filling the No. 4 water tank caused the capsizing. The other three tanks aboard had, presumably, been filled previously.

* * * *

**Scarlet Queen Sold**

The long and hectic existence of the former tuna clipper Scarlet Queen has struck another milestone with another change in ownership last month. The purchase was announced by the new owners, Lou Brito, Roland Virissimo, and Avalino Gonsalves, all San Diegans. The purchase price was said to be $300,000.

The name Scarlet Queen was changed last year to the Explorer shortly after she was sold at auction, at the Harbor Boat & Yacht Club yard, by numerous interests ranging from Tacoma to San Diego. This $500,000 vessel had one of the most illustrious launchings ever accorded a fishing vessel in San Diego, attended by dignitaries and movie celebrities.

She operated from the beginning in a series of tough luck that put her aground at least one time, innumerable bust trips, and other events that were extremely costly for her owners. On at least two occasions, however, her nearly 600-ton holds were filled with fish. Her most recent fishing voyage to Southern waters brought in 585 tons.

The new owners have announced her operation as a tuna fishing vessel from the Port of San Diego is "entirely dependent upon satisfactory price agreements with the canners." Should the price be unsatisfactory the Explorer will be operated as a freezer vessel for smaller fishing boats operating in southern waters, the owners said.

## Oregon Salmon Fishing

Several hundred trollers crossed out of the Columbia river and other harbor entrances in Oregon and Washington March 15 on the first trip of a 7½-month Chinook Salmon season. The offshore season for silver salmon opens June 15, when more small boats will go to sea for both species. The California Chinook season opens May 1.

Chinook salmon caught offshore must be of 26-inch minimum length. Oregon places no minimum on silvers, but Washington requires that this species be at least 22 inches.

A troll boat may be anything from a 26-foot converted lifeboat, to which the fisherman adds a cabin and outriggers, to a 70-foot square-ender built primarily for bottomfishing. A typical troller is perhaps 44 feet long, 12 of beam, and draws 6. Its 40 to 60-horsepower engine, diesel or gas, permits economical operation at slow trolling speeds, but also permits it to scurry to port at approach of a storm. Cost of a troller may be from a few hundred dollars for a conversion, to $70,000 for a big boat.

Small trollers make daily trips, while larger boats may stay outside three or four days, or may travel up or down the coast until they hit fish, and may land their catches at other than their home ports. All carry ice for packing their dressed fish.

Seven hundred commercial trolling boats were licensed in Oregon in 1952, latest year for which official figures have been released at the Astoria office of the State Fish Commission. This includes boats whose home ports are outside Oregon, but which fish in Oregon offshore waters, or market catches in Oregon ports. The Fish Commission estimates that about 50 to 100 additional sport fishing boats were licensed for commercial trolling.

## Albacore Resources North of Hawaii

The U.S. Fish and Wildlife Service research vessel *John R. Manning* returned to its Honolulu base Sunday, February 6, completing a 30-day albacore fishing cruise in waters northwest of the Hawaiian Islands.

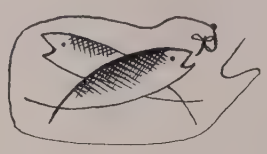
According to O. E. Sette, director of the Pacific Oceanic Fishery Investigations, the cruise was the latest in a series aimed at mapping the winter extent of the central North Pacific albacore, a fishery resource hitherto unexploited by American fishermen. The albacore is the highest priced of the tunas, and the domestic production falls far short of the demand.

Mr. Sette points out that the opening up of fishing grounds for this species within operating distance of Hawaii may mean the eventual development of a new fishing fleet based in the islands, and it is anticipated that the mainland tuna industry will also show a keen interest in the results of these explorations.

According to Tamio Otsu, scientist in charge aboard the *Manning*, weather conditions were more favorable for fishing than on any other recent northern cruise, and albacore were found over a broad area between 29 and 32 degrees north latitude from 160 degrees west to 180 degrees longitude covering more than 100,000 square miles of ocean north of Midway Island.

The fish weighed up to 70 pounds, and were captured mainly on longlines (flaglines), although a few small ones were taken at the surface by trolling. Most of the albacore taken were tagged and released alive in the hope that subsequent recaptures may shed additional light on the migrations of this species which apparently traverse the whole North Pacific.

The *Manning* put in briefly at Pearl and Hermes Reef, an extensive shoal area 75 miles southwest of Midway, in order to reconnoiter the supply of live bait there. Large mullet and akule were plentiful, numerous turtles and seals were seen, and a large population of goony birds was nesting on the reef, but no supply of small fish suitable for tuna bait appeared to be present.



## Pacific Mackerel May be Going Way of Sardine

The Pacific mackerel may be going the way of the vanishing sardine.

This is brought out by figures released by the California Department of Fish and Game which show the 1953-54 catch of 7,600,000 pounds to be the lowest in 26 seasons.

Not since 1928, when the Pacific mackerel first became popular as a cannery species, has the seasonal catch dropped below 10,000,000 pounds.

Annual hauls averaged over 100,000,000 pounds in the late thirties. The highest postwar catch was about 50,000,000 pounds in 1949.

**No Chance to Spawn**

Not only did they weigh less than a half a pound apiece, compared to the two pounds they could have reached if allowed to grow to maturity, but they got no chance to reproduce. These fish would not have spawned until April, 1955.

Such hauls destroy the seed stock of the fishery, the department warns.

# The Sablefish Fishery

By JOHN T. GHARRETT

SABLEFISH (sometimes called black cod, candlefish or coalfish) are found along the Pacific Coast from Southern California into Alaska. This fishery is unimportant in Southern California, though current California landings total nearly two million pounds a year, or approximately one-fifth of the entire coastal landings. The highest landings in California occurred in 1945, during World War II, when a little over six million pounds were landed.

Adult sablefish are taken in deeper water than are the juveniles. In the winter months, large fish may be taken from as deep as 400 fathoms. The best fishing for large fish is encountered in 200 to 250 fathoms in the winter months and in 90 to 165 fathoms in the summer months.

The sablefish is considered as one of the best of the smoked fishes but is not sold fresh to any great extent because of the high oil content. Small quantities are drysalted. A premium price is paid for large fish that are about seven pounds and over, in the round. This demand originates with fish curers, who also desire that the fish be frozen.

At one time livers from certain species of marine fish, including sablefish, were a lucrative by-product of these fisheries. However, large-scale production of synthetic vitamin A in recent years has greatly depreciated the value of fish livers.

### In California

The analysis of the condition of the stocks of sablefish is based upon the annual average pounds per delivery of the longline fleets in the Eureka, Fort Bragg, and Monterey regions during the years 1941-1952, inclusive. Ninety-five per cent of the California catch in these years was made in the above regions.

The annual average pounds per delivery for the longline boats increased rapidly during the first few years and then fluctuated around a nearly horizontal trend line in later years, indicating a relative constancy in the annual return per unit of effort during the post-war years.

Editor's Note: These are the summaries contained in a 120-page booklet just issued by the Pacific Marine Fisheries Commission, Portland 1, Oregon.

During the seven years following World War II, 1946-1952, the longline fleets made an annual average delivery of 1,382 pounds in the Eureka area; 1,422 pounds in the Fort Bragg area; and 683 pounds in the Monterey area.

There is a strong inverse correlation with the total United States cold storage holdings of sablefish at the start of a year and the resultant catch during that year for the post-war years.

No evidence was found to indicate a depleted condition of the stocks of sablefish in the Northern and Central California regions. The annual fluctuations in the catch are associated with demand. An inter-relationship of the coastwise fishery is indicated.

### In Washington and Oregon

Though the Washington and Oregon fisheries are of very different magnitudes, their character and the reactions of their stocks to fishing are very similar. Both have shown a general decline in abundance. Fluctuations in their annual yields show evidence of being in response to economic conditions. Both fisheries supply a supplemental catch for the trawl fleet and a late summer and fall occupation for setliners. Since 1947 a growing proportion of the catches has been taken by trawl gear. Declining prices coupled with low yield per unit of setline effort will probably accelerate this trend. The non-dependence of trawl gear upon any single species for its earnings will permit such gear to fish at stock levels below those possible for setline vessels.

In both Oregon and Washington it appears that the stocks are being maintained at levels of yield determined by economic conditions. Knowledge of the stocks is insufficient to judge whether the present levels are above or below their biological optima.

While the ultimate aim in managing a fish stock may be to secure the maximum yield, some consideration may be given to whether the stock level required to produce such a yield may be the most profitable one. Thus, if the Cape Flattery stocks are still above their optimum biological level, some increase in fishing might add to the yield, but the larger total yield might have less market value due to the smaller average size of fish. It is also possible that any further decline in catch per unit effort and average size of fish might require that most of the catch be taken by gear not dependent upon sablefish alone for all its earnings.

On the other hand, if the Cape Flattery stocks are below their most productive level and are being fished on a more or less marginal economic basis it would be profitable to consider raising the stock levels at least to some intermediate point. At such a level fishing costs would be lower particularly for setline vessels and the larger individual fish caught would be more valuable. A more stable fishery might ensue that would be less responsive to short-term fluctuations in economic conditions. Such intermediate levels are more readily attained and do not require the costly research necessary to solve the biological problems involved in securing the maximum yield.

### In British Columbia

Throughout the past 35 years the sablefish (*Anoplopoma fimbria*) has ranked as a valuable contributor to the fisheries of British Columbia. The annual catch in the years following World War II has averaged close to two million pounds and has accounted for about one-quarter of the total average annual catch by all political divisions operating in the northwest Pacific.

Although commercial exploitation began as early as 1888, the fishery did not achieve importance until the years of World War I. Production declined rapidly after the war because of reduced demand. After reaching a low point in the early thirties, it began to rise again, mainly

as a result of increasing effort, brought about by the growing demand for the livers and the progressive shortening of the halibut fishing season. A sharp rise in price in World War II, provided the impetus for continued expansion of the fishery. Decline in the liver market and periodic over-production has brought a decline in yield in recent post-war years.

In the 1951-53 period, approximately 46% of the annual catch was made adjacent to southeastern Alaska. About 21% of the catch came from the west coast of the Queen Charlotte Islands, while the remaining 33% came mainly from the waters adjacent to the northern end of Vancouver Island.

In the seven year period ending in 1953, about 83% of the annual catch was made between the months of June and October. The month of peak production is either July or August. In one area only (west coast of the Queen Charlottes) the bulk of the production occurs between February and April.

Over the past 35 year period there has been a steady increase in the importance of the northern grounds. Whereas the majority of the landings were made at the southern B.C. ports prior to 1930, these have declined to 30 to 40% of the total in more recent times. During World War II, the fishery off southern B.C. did not expand to the same extent as did that in the north, which suggests that it is producing to or beyond its capacity.

Both the northern and southern grounds have shown a change in abundance within the past two decades. The catches per unit of effort on the northern and southern grounds are now two-thirds of their values during the thirties.

On the majority of fishing grounds along the coast the period of most pronounced decline in catch per skate was between 1944 and 1947. From 1947 to the present a condition of relatively stable availability has occurred. The level at which each fishery has stabilized seems to be related to the history and intensity of the fishery and probably to the cost of production as affected by the distance from major railhead markets. The catch per skate on grounds off southeastern Alaska is now at a level 40% higher than that off the west coast of the Queen Charlottes and in Queen Charlotte Sound and 100% higher than that off Cape Flattery.

**In Alaska**

From the early tagging returns and samples taken of the commercial landings of sablefish, it appears that the sablefish in Alaskan waters are separated into local stocks. While the stocks in the inside waters seem to be of local origin, the interrelationship of the stocks in the outside waters is not as yet clear.

The relative abundance as indicated by the catch of numbers of fish per skate shows a general decline in all areas followed by a leveling off period since 1947. The present fishery is one of varying degrees of intensity which fluctuates with market conditions and carry-over cold storage holdings.

From a biological viewpoint there appears to be no basis for a 4½ pound minimum size limit, as such a proposed restriction would only offer protection to a small percentage of the catch, the majority of which is composed of mature males.

**Results of Tagging Experiments**

Before any recommendations for the management of the sablefish fishery could be made, the amount of movement of the sablefish stocks had to be known. If the stocks migrate extensively coastwise they would have to be managed as a single unit. If the stocks are divided into local groups of fish remaining in one area, they could be managed as distinct units. The California, Oregon, and Washington research agencies agreed at the recommendation of the Pacific Marine Fisheries Commission to study the problems of sablefish migration, and tagging programs were conducted in each state for this purpose. Incidental information was expected on age and growth of sablefish in conjunction with the tagging experiments.

There were variations in the methods used in the three states, but, in general, plastic disk tags of the Petersen type were affixed with metal pins to the dorsal surface below the dorsal fins of 9,511 sablefish. The tagging was done mainly from commercial vessels in regular fishing areas. Fish were tagged from both setline and otter-trawl geared vessels in the Washington and Oregon experiments, but from setline geared vessels only in California. Nickel, stainless steel, and German silver pins were used.

Of the 9,511 sablefish tagged along the coast, 243 (2.55%) were recovered. The Californians tagged the most fish, 4,073, and obtained the greatest percentage of recoveries, 3.16% (129 fish). The Washington experiment resulted in the next best recovery rate, 2.86% or 67 of the 2,341 fish tagged. The 3,097 tagged fish placed Oregon second in numbers of fish tagged, but the percentage of recoveries, 1.52% (47 fish), was the lowest of the three states.

Most of the tagged fish were recovered near the region of initial release, and only a few individuals made long migrations. The greatest number of returns were made within 30 miles of tagging, which indicates the local nature of the stocks although many recoveries were made within five months of tagging which may not have allowed much time for migration to take place. The north-south migration was fairly well balanced in all areas. The tagged fish were found to scatter throughout the depths fished. No relationships were found between size of fish and direction or extent of migration. There was no fishery in deeper water to detect any seasonal movement had it occurred.

The sablefish in the Washington offshore waters appeared to grow faster than either the Oregon or California fish. Most of the California and Washington recoveries were made the same season that the tagging was accomplished, and the most recoveries were made the second sea-

*(Continued on page 19)*

# EBB 'n FLOW

## Navicote Distributor

The Weeks-Howe-Emerson Company, 645 Howard Street, San Francisco, one of America's oldest and most active ship chandlery firms, has been appointed distributors of marine finishes, according to an announcement by Vice President Earl Huston, Jr., of Hart and Burns Company, a Division of Devoe and Raynolds Company, Inc.

The Northern California firm is the latest of Hart and Burns Company distributors, but has distributed Devoe and Raynolds marine finishes for many years. Navicote is now available at every important port on the coast from San Diego to Vancouver, B. C., Houston said.

## Better Spark Plugs

Spark plug fouling and rusting—two problems that plague outboard motorboat owners—has been overcome in the new line of plugs being produced by AC Spark Plug Division of General Motors. Fouling has been tremendously reduced through use of the new "hot tip" insulator. It resists harmful deposits over the entire range from idling to racing—deposits that cause plug fouling and pre-ignition of the fuel mixture.

## Gulf of Mexico Bulletin

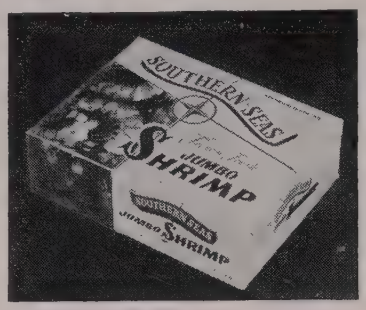
The Gulf of Mexico as seen through the eyes of scientists is described in a 604-page bulletin titled Gulf of Mexico—Its Origin, Waters, and Marine Life, released by the U.S. Fish and Wildlife Service.

This exhaustive treatise was prepared primarily as a guide for scientific research projects, a number of which are now being conducted in the Gulf by Federal, State, and private organizations.

Written by 55 American scientists concerned with the physical and biological aspects of the Gulf, and coordinated by fishery research biologist Dr. Paul S. Galtsoff of the Fish and Wildlife Service, the publication is the result of three years' cooperative effort.

The bulletin discusses early explorations in the Gulf and summarizes all available information on its shorelines, geology, meteorology, physics, chemistry, and communities of plants and animals ranging from the bacteria through the marine mammals.

Copies of the book may be purchased for $3.25 each from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.




## New Package Designs

New package designs and new packs have been added to complete the frozen shrimp line of Marine Products Company, San Diego, Calif.

Retail packages for Southern Seas brand were redesigned as part of that line of frozen seafood specialties, and both Southern Seas and Ocean Garden brands are now marketed in 10 oz. raw frozen, 10 oz. breaded and 5 oz. fried shrimp packages.

For the increasingly popular home freezer trade, new packages include a two-pound pack of fresh frozen shrimp, and two and one-half pound packs of breaded shrimp, in jumbo, large and medium sizes. These packs are also widely used by smaller restaurants seeking to hold down stocks and conserve refrigerator space.

Breaded fish sticks have been introduced under Ocean Garden, Southern Seas and Stowaway brands, and fillets of halibut and seabass are packed in new Stowaway packages for retail distribution.

## Pacific Oceanographic Survey

The Governments of Canada, the United States and Japan will cooperate in making a large-scale oceanographic survey of the North Pacific Ocean in 1955. The basic purpose of the survey is a study of ocean currents but collateral studies will be made of radioactivity, migration of fish and meteorological conditions.

## Sportsmen's Show

Observing its tenth anniversary, the annual Sportsmen's, Vacation Boat and Trailer Show will be held in Pan Pacific Auditorium, Los Angeles, April 14 to 24. As the nation's largest recreational extravaganza, this show is a mecca for thousands of fishermen and hunters, as well as scores of boating, trailer and camping enthusiasts.

## Ecuador Fishery Concessions

Concessions recently were awarded by the Ecuadoran Government to two fishing companies owned by United States interests but organized under Ecuadoran law, states a U.S. Embassy dispatch from Quito. Pesca Ecuatoriana Santælenense C. A. was authorized to fish in Ecuadoran waters without restriction as to species, and to process and export such fish. Products del Pacificio Ecuatoriano S. A. was authorized to fish for shrimp in Ecuadoran waters and to process and export the shrimp.

The concessions granted the two companies are identical in many respects. Each is to run for ten years. Each company is exempted from export taxes. Domestic sales are to be made at controlled prices so fixed by the Government as not to allow the companies more than a 15% profit margin. Vessels owned by the companies must be registered under the Ecuadoran flag within a year after the signing of the concession agreements. At least 25% of the personnel employed in each part of their operations (fishing, refrigeration, and processing) must be of Ecuadoran nationality. Exemption is granted from all duties on the machinery, equipment, and capital permitted to be imported for establishing and carrying on the business.

# TIDES OF THE INDUSTRY

## High-Speed Electric Plant

The trend in electric plants for portable and stand-by service is to higher speed models. A new model Universal Generating Set has an engine speed of 3600 r.p.m. This allows smaller size and lighter weight. Descriptive literature on all Universal electric generating sets is available by writing the manufacturer, Universal Motor Company, Oshkosh, Wisconsin.

## Anti-Rust Paint

A new black anti-rust paint that is said to afford low cost protection of exterior metal work incorporates a bituminous base with a special paint vehicle to produce a heavily bodied coating which can be applied on outside metal after a minimum of surface preparation.

Known as CI-88, this paint is recommended for use on stacks, railings, machinery, tanks, refuse containers, pilings, etc. It dries to a semi-gloss finish and can be applied by brush, spray or dip. For additional information, write to Chem Industrial Co., 3784 Ridge Rd., Brooklyn 9, Ohio.

## Arctic Ocean Research

Canadian and United States scientists have penetrated far inside the Arctic Circle in a joint effort to learn more of the "secrets locked in the great water areas north of the Canadian mainland." Surveys were made for the first time of the "lonely ice-strewn waters" around the northern shores of islands comprising the District of Franklin. The Royal Canadian Navy's modern icebreaker the "Labrador" rentured into Baffin Bay as far north as Smith Sound, 800 miles from the North Pole, to obtain data on water temperatures, salinities, currents and other physical features of the sea-scapes.

## FWS Reactivates Research Vessel "Black Douglas"

The Fish and Wildlife Service's research vessel *Black Douglas* departed from San Francisco last month for San Diego, her new home port, to take part in the South Pacific fishery investigations. An allocation of funds under the terms of the Saltonstall-Kennedy Act, P.L. 466 (83rd Congress), allows the Service to operate the *Black Douglas* again. This vessel had been inactive for two years.

The vessel will drop drift bottles at selected localities to obtain information on direction and speed of ocean currents off the California coast. This work is part of the California Cooperative Oceanic Fisheries Investigations, a joint study of the sardine, jack mackerel, anchovy, and other fishes being made by the U.S. Fish and Wildlife Service, Scripps Institution of Oceanography, California Department of Fish and Game, Hopkins Marine Station, and the California Academy of Sciences.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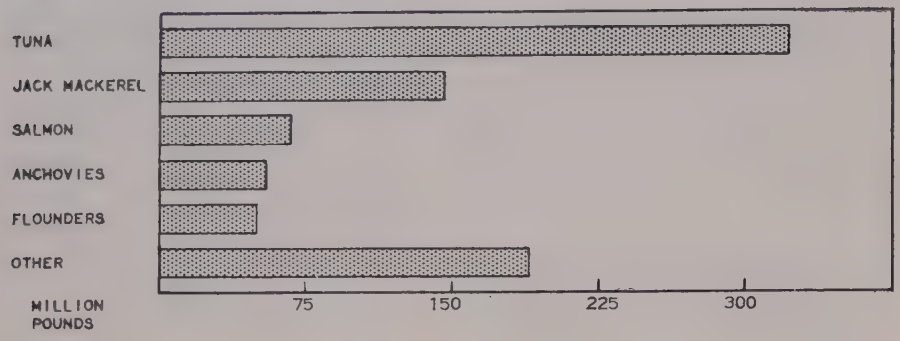
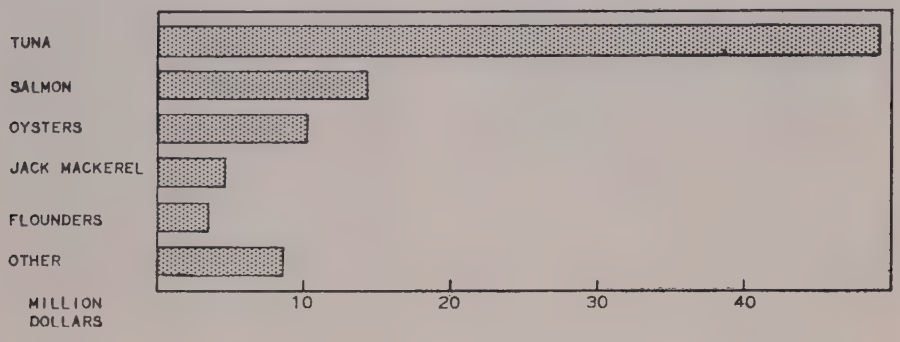
# Catch In the Pacific Coast States




**VALUE OF PACIFIC COAST STATES CATCH, 1952**




# U. S. Foreign Trade

United States Foreign Trade in Edible Fishery Products, 1949-53, Fishery Leaflet 421, was recently issued by the Service's Branch of Commercial Fisheries. This leaflet analyzes the foreign trade in edible fishery products of the United States from 1949 through 1953. Included are tables and charts showing the quantity, types of products, value, and origin or destination of the principal fishery products in the foreign trade of the United States.

Definite changes are shown in the pattern of United States foreign trade in edible fishery products during the postwar period, 1949-53. Since 1949 the volume of imports has increased rapidly, reaching record levels in 1953. Exports which were at a relatively high level in 1949, dropped to a record low in 1953, substantially below the levels of the depression years 1932 and 1933.

Imports of edible fishery products in 1953 were more than double the quantity of the annual average of such imports during the prewar period 1934-38. Among the major items showing substantial increases over the prewar average were fresh and frozen tuna, canned tuna and tuna-like fish, and fresh and frozen fillets. Exports of edible fishery products in 1953 were 29% below their prewar average in quantity. Canned salmon and sardine exports were the principal items accounting for this decline.

United States imports of edible fishery products during 1953 totaled $195 million foreign value, or almost seven times the value of the 1934-38 average. The value of exports of edible fishery products in 1953 was 28.6% above the prewar average.

The importance of United States foreign trade in fishery products to the domestic fishery economy can perhaps be more readily grasped by a comparison with the domestic catch. The United States and Alaska fisheries produced in 1953 a catch of about 2.6 billion pounds, round weight, of fish for edible purposes. Imports of fishery products in 1953, when converted to a round weight equivalent, represented a catch of more than 1¼ billion pounds, or equivalent to 49% of the domestic catch used for edible purposes. Stated in yet another way, the 1953 imports represent about one-third of total United States consumption of edible fishery products.

Foreign markets for United States fishery products have provided important outlets. Export markets have required up to 14% of the domestic catch of fish used for edible purposes. In 1953 about 5% of the United States catch used for edible purposes was exported or went into the manufacture of edible fishery products ultimately sold abroad.

The major competitors for the United States domestic trade in fishery products are Canada, Norway, Iceland, Mexico, Japan, Portugal, Peru, and the Union of South Africa.

Free copies of Fisheries Leaflet 421 are available from the Division of Information, U.S. Fish and Wildlife Service, Washington 25, D. C.

## Japanese in North Pacific

Plans for Japanese salmon, trout, and crab fishing in North Pacific waters for the coming season were announced recently by the Japanese Fisheries Agency, according to a dispatch from the U.S. Embassy in Tokyo. Salmon-trout fishing fleets in Aleutian waters will be markedly increased above the 1954 expeditions and special exploratory fleets will be sent into the Okhotsk Sea.

The salmon-trout fleets will consist of 11 motherships, 284 fishing boats, and 50 survey boats. These fleets compare with seven motherships and 160 fishing boats employed in 1954. The Fisheries Agency also states that the fleets will be permitted to fish 20 miles off the Kamchatka coast, where last year a 30-mile limit was imposed. The increases in both fleets and fishing area are anticipated to produce a catch of 40 million fish, or about double last year's catch. All motherships in this year's fleets are to be equipped with canning facilities.

In addition to these fleets, four expeditions, characterized as "exploratory," are authorized to enter the Sea of Okhotsk for the first time since World War II. These fleets will consist of two mothtrships, 50 fishing vessels, and eight survey vessels for exploratory salmon and trout fishing; and two motherships for exploratory crab expeditions.

# Fishery Products Output In 1954

The pack of canned fish and shellfish in the United States and Alaska totaled about 860,000,000 pounds in 1954 as compared with 792,000,000 pounds in 1953. Secretary of the Interior McKay revealed February 7.

The 1954 pack was the third largest in history, exceeded only by the 1941 and 1950 outputs of 881,000,000 and 965,000,000 pounds, respectively, according to statistics compiled by the Fish and Wildlife Service.

The largest individual increase was in the Pacific sardine pack which came to 60,000,000 pounds as against 3,000,000 pounds in 1953. The 57,000,000-pound gain was due to a return of this species to southern California waters after a virtual absence in recent years.

Production of canned tuna set an all-time record of 209,000,000 pounds in 1954, as compared with 189,000,000 pounds in the previous year. The 20,000,000-pound increase was due to a larger domestic catch and heavier imports of frozen tuna from Japan and Peru.

Canned salmon showed a 1954 pack of 194,000,000 pounds for a gain of about 3% over 1953. Bolstering the output were a 230,000,000-pound pack of sockeye salmon in the Puget Sound area—the largest since 1913—and a 28,000,000-pound pack of chum salmon in southeastern Alaska (as against 20,000,000 pounds in 1953).

Production of canned Maine sardines in 1954 came to about 61,000,000 pounds, for an increase of 8% over the previous year.

Canned oysters showed about the same pack as in 1953 when approximately 6,800,000 pounds were produced.

Reports from the Pacific Northwest revealed heavy canning of oyster stew in that section, with a 1954 pack of more than 4,800,000 pounds as compared with 3,400,000 pounds in 1953.

American cold storage plants froze 303,000,000 pounds of fish and shellfish in 1954, for an increase of 27,600,000 pounds over the previous year.

Domestic production of groundfish and ocean perch fillets in 1954 totaled 126,000,000 pounds, as compared with 112,000,000 pounds in 1953. Production of fish sticks, manufactured chiefly from imported cod fillets, came to more than 50,000,000 pounds as compared with 7,500,000 pounds in 1953 when this commodity was first introduced.

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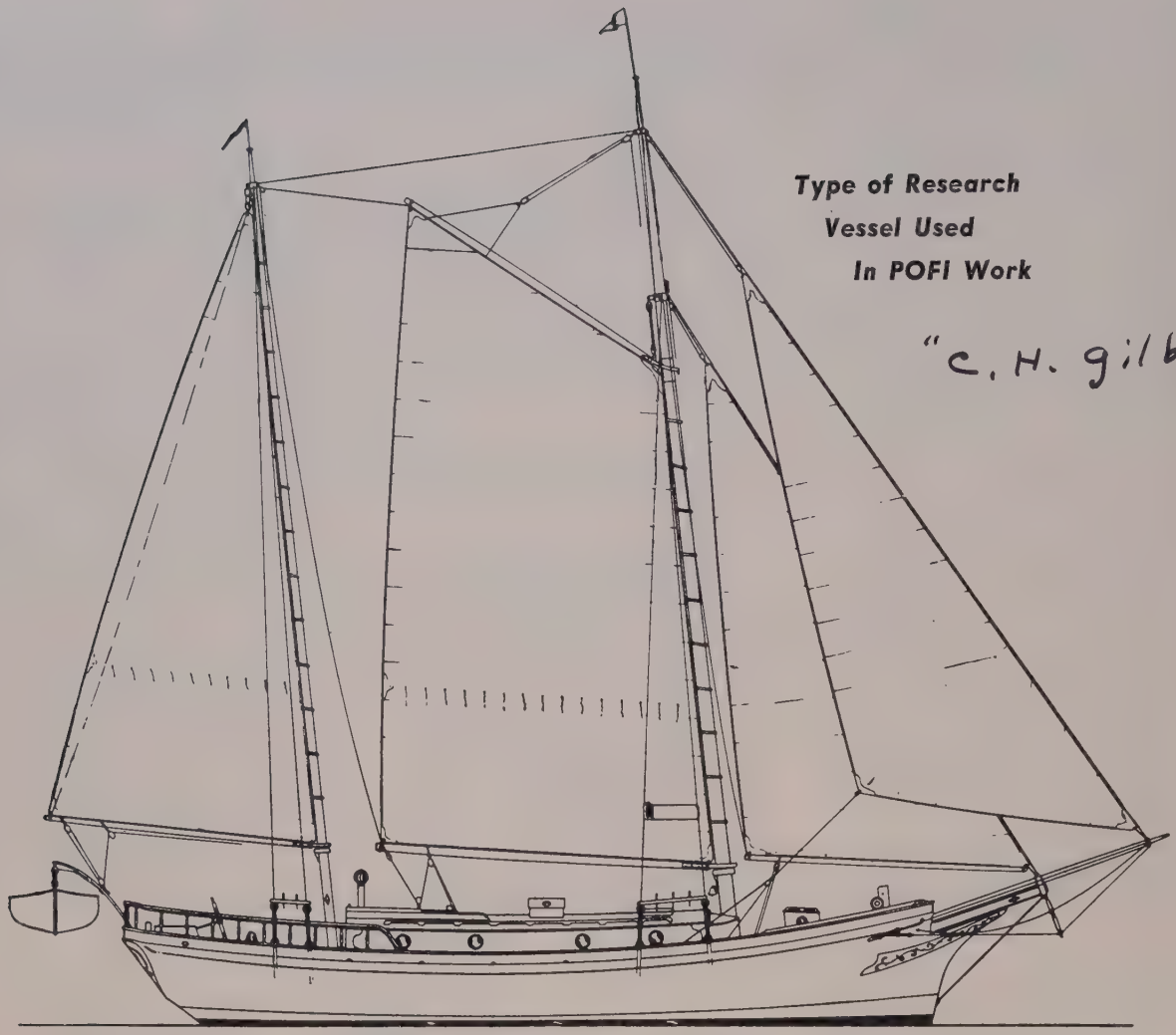


**Type of Research Vessel Used In POFI Work**

"C. H. Gilbert"

# Pacific Oceanic Fishery Investigations

BOTH the *Hugh M. Smith* and the *John R. Manning* completed their oceanographic and fisheries surveys of the potential albacore fishing grounds north of Hawaii during February.

Albacore were taken by longline between 29° and 36° N. latitude and from 160° W. to 180° longitude. The catch was small, averaging only five per day fishing with 60 baskets (780 hooks) in the albacore area. In addition a few small albacore were taken at the surface by trolling. The sizes from both kinds of gear ranged from three to 70 pounds.

At the same time the *Smith* completed her cruise of 6,500 miles extending from 180° to 160° and from the Hawaiian Islands north to 37° N. latitude. The winter oceanographic conditions north of the Islands were surveyed and a band of water, which was identified as the boundary between the North Pacific Drift and the North Equatorial Current, was found between 30° and 35° N. latitude.

Putting the oceanographic and fishing data side by side, there is evidence that this is a band of transition water which contains albacore. It can readily be identified from the oceanographic observations. Midwater trawl hauls were rich in this region as were the plankton tows. Considerable numbers of sauries were attracted by night-lighting.

**Live Bait Survey**

In addition to the oceanographic work the *Smith* surveyed Midway and Layson islands for live-bait while the *Manning* surveyed Pearl and Hermes Reef. Little live-bait was found on Pearl and Hermes Reef although considerable amount of large mullet and akule (mackerel) were present.

At Midway about 30 schools of bait fish were located but at Layson Island only four small schools could be found. It was concluded that at the time these surveys were made baiting would not be successful at either Pearl and Hermes Reef nor Layson Island, but could have been accomplished at Midway.

**Sea Birds Found**

At Midway, 26 of the rare Hawaiian monk seal were counted and 105 were seen on Layson. Eleven young seal pups were observed to have been recently born to the Laysan seals.

The Layson teal, a very rare small duck found only on the island for which it is named, appears to be increasing. A total of 161 of these small ducks were counted which is the largest number observed in recent years.

A large number of perhaps 500,000 Laysan and black-footed albatross were nesting on the small island with the small Layson finch, frigate

birds and other sea birds present in considerable numbers.

**Artificial Bait Tried**

The *Charles H. Gilbert* returned from a trip south and west of Hawaii to determine the winter occurrence of skipjack and to conduct experiments with artificial baits on yellowfin tuna schools near the Equator. Skipjack schools were unusually scarce along the *Gilbert's* course with rarely more than one or two schools being sighted each day.

No concentrations of tuna schools were found anywhere between the Hawaiian Islands and the Equator. In the Line Islands a few schools of small, fast-moving yellowfin were observed.

Tests were made of various types of artificial tuna bait but no schools were successfully fished using these lures. A bait survey showed only small quantities of bait in the lagoons of any of the Line Islands.

At the request of the Territorial Division of Fish and Game, a number of live red snapper, a fish present in the Line Islands in quantity but not present in Hawaiian reefs, were transported back to Hawaii for possible introduction here. Vernon Brock, the Director of the Division, accompanied the *Gilbert* for part of the trip. *

## More Research by

# The John R. Manning

THE research vessel *John R. Manning* returned to its Honolulu base on February 6, completing a 30-day albacore fishing cruise in waters northwest of the Hawaiian Islands. The cruise was the latest in a series aimed at mapping the winter extent of the central North Pacific albacore, a fishery resource hitherto unexploited by American fishermen. The albacore is the highest priced of the tunas, and the domestic production falls far short of the demand. O. E. Sette, Director of POFI, points out that the opening up of fishing grounds for this species within operating distance of Hawaii may mean the eventual development of a new fishing fleet based in the islands, and it is anticipated that the mainland tuna industry will also show a keen interest in the results of these explorations.

**Weather Conditions**

According to Tamio Otsu, scientist in charge aboard the *Manning*, weather conditions were more favorable for fishing than on any other recent northern cruise, and albacore were found over a broad area between 29° and 32°N. from 160° W. to 180° covering more than 100,000 square miles of ocean north of Midway Island. The fish weighed up to 70 pounds, and were captured mainly on longlines (flaglines), although a few small ones were taken at the surface by trolling. Most of the albacore were tagged and released alive in the hope that subsequent recaptures may shed additional light on the migrations of this species, which apparently traverses the whole North Pacific.

The *Manning* put in briefly at Pearl and Hermes Reef, an extensive shoal area 75 miles southeast of Midway, in order to reconnoiter the supply of live bait there. Large mullet and akule were plentiful, numerous turtles and seals were seen, and a large population of goony birds was nesting on the reef, but no supply of small fish suitable for tuna bait appeared to be present.

**Water Temperatures**

The cruise was carried out in conjunction with oceanographic investigations by the *Hugh M. Smith* with the object of finding out what water temperatures and other conditions in the sea are associated with the presence of albacore.

The *Smith* docked at Pearl Harbor February 21 after a scientific cruise that lasted over a month and a half and covered 6,500 miles of the central North Pacific. Service scientists found evidence of potentially rich ocean waters lying between 30° and 35° N., about 600 to 1,000 miles north and northwest of Hawaii. Mr. Sette pointed out that it is still too early to tell how abundant albacore might be in this region, but the temperature and other characteristics of the waters are favorable over a large area, and the experimental fishing to date has demonstrated that this valuable white-meated tuna occurs there in some quantity.

**Live Bait Surveys**

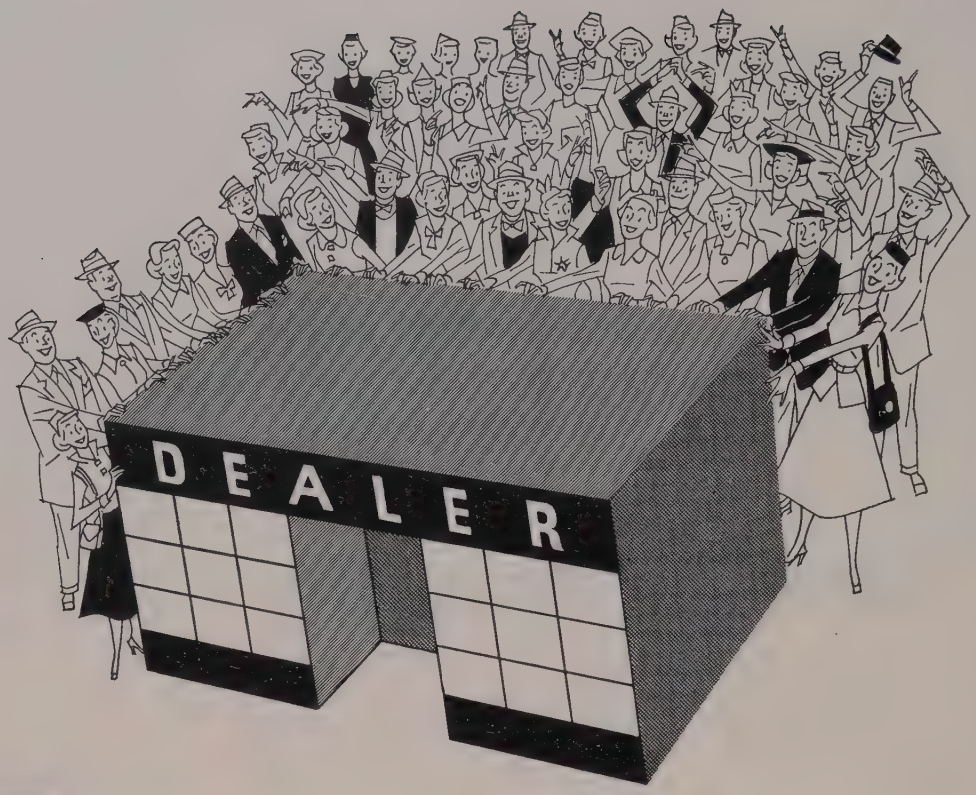
In addition to their oceanographic studies, the field party aboard the *Smith* made live-bait surveys of Midway and Laysan islands, both of which are in the Leeward Group of the Hawaiian Archipelago. The discovery of new bait resources in the Leeward Islands would be of great assistance to the Hawaiian tuna industry, because the catch of skipjack or aku, Hawaii's most important fishery, is limited at times by the inadequacy of the supply of small live bait fish in the waters around the main islands. Such a discovery would also enable the skipjack fishery to expand its operations over a much broader area than is fished at present. At Midway about 15 schools of iao, 10 schools of aholehole, and 5 schools of piha, all of sizes suitable for use as live bait, were found. At Laysan, however, only 4 schools of aholehole and iao were seen. which means that although Hawaiian-style skipjack sampans would have been able to bait successfully at Midway, they would have failed to do so at Laysan. *

# The Sablefish Fishery

*(Continued from page 13)*

son after tagging in Oregon. The length of time at liberty reflected the seasonal nature of the fishery. No relationship was exhibited between length of time at liberty or size of fish and amount of migration.

The low number of recoveries in these experiments is difficult to explain. Tagging mortalities could have been high, and tag losses may have been great producing low tag returns. The fishing activity for sablefish appeared to be low off the Oregon coast and this is believed to account for the low recoveries relative to the other states. Also many Oregon fish were tagged late in the season making them subject to winter losses before being available to the fishery in the following season. Recovery percentages varied directly with the condition of the fish estimated at tagging. Fish in good condition gave the highest percentage recovery, although no statistically significant difference was found between the number of recoveries in the three grades of condition. *

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*(Continued from page 8)*

nese) export business was with the United States--and consisted largely of canned and frozen tuna."

The embassy report goes further. It predicts that in 1955 the Japanese fish export business is likely to be even better than in 1954. It believes that demand for tuna in the United States will "presumably" be stabilized by early 1955. And, it points out, "should there be any appreciable lowering of import tariffs of the United States and of the sterling countries for such products the effect would be promptly felt in Japan's fisheries." The implication is that much more tuna and other fish and fish products would be shipped to the U.S. when and if lower tariffs are permitted.

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IMPORTS.--The United States is a better fish market for other countries than foreign countries are for us. This was brought out vividly recently in testimony of the Branch of Commercial Fisheries before the House Merchant Marine and Fisheries Committee. In value of fish and fishery products, our imports top our exports by at least 10 to 1.

European countries are our biggest fish customer, but we import about 3 times more fish and fish products from Europe than we ship there. In 1953, the U.S. fishing industry shipped 34 million pounds to European countries, but in the same year they sent us 110 million pounds.

Our next biggest fish customer is Canada, but for every pound we send north, Canada ships us about 30 pounds. Asian countries are third largest importers of U.S. fish, but they are our second largest supplier of foreign fish--next to Canada. Asia, mainly Japan, in 1953 shipped us 149 million pounds, while in return they bought only 11 million pounds from us.

According to the testimony, there is no country in the world which buys more fish or fishery products from us than we buy from it.

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VENEZUELAN TUNA.--Venezuelan canners are to be helped by Japanese tuna experts in setting up a tuna industry in that South American country, according to a recent U.S. embassy dispatch. A report on Venezuelan fishes in Caribbean fisheries a year ago pointed out that there are tuna present in Venezuelan waters but these fish are not now being exploited.

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SPAIN EYES U.S. TUNA MARKET.--Don't be surprised to learn sometime in the not-too-distant future that large amounts of Spanish albacore tuna are coming into the U.S. market. Spanish canners, who have for many years been supplying canned fish to the U.S., principally sardines, are reported eyeing the big tuna market here. At present, however, the Spanish industry is not geared to pack albacore in sufficient quantities.

But there is a big move on in Spain to launch an albacore tuna operation specifically to supply U.S. For one thing, the Spanish Fish Canners Association is actively negotiating with the Association of Owners of Fishing Vessels to extend the albacore fishing season, operating from about the early part of March until the end of September. The normal

season is from about mid-May to the end of September. One big hitch, though. And that is that many boat owners don't have the finances to make the big equipment change-over that would be necessary on Spanish fishing vessels.

LEGISLATION.--Here's a run-down of legislation pending in Congress of interest to the fishing industry:

Minimum wage increase. The Administration's proposal to boost the national minimum wage from the present 75¢ per hour, to 90¢ per hour, still is in the responsible committees of Congress. It is expected to be reported out soon. Chances of passage are considered good, although labor leaders are driving to boost it to $1.25 per hour.

Chemicals. Several bills have been introduced which would prohibit the use of new chemical additives in food which have not been adequately tested to establish their safety. This type of legislation, of interest to processors, is not expected to clear Congress this year, but officials predict that it may become law next year.

Hawaii-Alaska Statehood. The House Committee on Interior and Insular Affairs approved the statehood bill, but observers here do not think it will be enacted this year.

Trade Agreements Extension. The House has passed HR 1 to extend the President's trade agreement powers, including permission to reduce tariffs 5% for each of the next three years. It is also expected to pass the Senate although efforts will be made to cut down on some of the presidential powers on trade agreements.

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TUNA IMPORTS.--During the month of December, the U.S. imported more than four times the amount of frozen tuna as in the same month a year ago. December 1954 imports totaled 8.7 million pounds, compared with 2.1 million pounds in the same month a year ago.

This brought the total for 1954 to a record 123.4 million pounds, an increase of 30% over 1953. Of the 1954 imports, the Branch of Commercial Fisheries says, 98 million pounds were received from Japan including 56 million pounds of albacore tuna. In 1954, Peru was the next leading supplier, contributing 20.3 million pounds to the total.

Imports of canned tuna amounted to 31.6 million pounds during 1954, about 9% less than during 1953. Of this quantity, 28.6 million pounds were from Japan and 10 million pounds were albacore tuna. Bonito, canned in oil and in brine totaled 15.4 million pounds imported in 1954. Most of this came from Peru.

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NEW BOATS.--The Branch of Commercial Fisheries reports that a total of 18 vessels of 5 net tons and over received their first documents as fishing craft during January. That was 38 vessels less than in the same month of last year.

The Chesapeake States, South Atlantic States, and Alaska each had 4 additions to their fishing fleets. The Gulf States added 3, the Pacific section had 2, and the Middle Atlantic section added only 1. The total number of vessels in the Nation's fishing fleet now stands at 717.

# Tuna In the South Pacific

Harold Gatty, who brought about he first organized tuna fishing industry in the South Pacific, made some nteresting comments on recent devel-)pments in that area.

The United States firm operating he tuna cannery at Pago Pago, Amer-can Samoa, by using Japanese fish-ermen and a special technique, is getting huge quantities of tuna—which proves that his theories and calculations (that the South Pacific carries large quantities of edible fish) were correct.

"The tuna of the Pacific Ocean is going to be one of the most important factors in the feeding of the future world," he said, "and the most important and valuable kind of tuna is the albacore. Wherever in the world—especially in the Pacific—the water temperature is about 64-66° F. the sea, from the surface right down to 200 fathoms or more, is thick with albacore tuna. You can get them over a wide area—from New Zealand and the Chathams, through the Kermadecs, for example, right up to the equator.

"The Japanese, last August fishing just east of the Solomons took 2,200 tons of albacore. Few people realize the enormous quantities of this excellent food that are available to any people, once they acquire the knowledge of how to catch it.

"The Japanese work on the basis that they will average from four to five fish per 100 baited hooks. They select their area; starting in the early morning they put out some 20 miles

of lines, carrying thousands of hooks; and they begin to pick up in the afternoon.

"The Americans have found some areas around Christmas Island where the average per 100 hooks is 12 fish —that is literally a harvest of the sea.

"The thing goes down to basic economics. The Japanese put about 35 men in each small vessel. Most of the heavy work is by hand—there are few mechanical aids in putting out and hauling in those miles of lines. There is very limited accommodation for the men — not enough bunks—and they have no fixed wage. They are paid on results. Their average pay, last season, was about US$9 per month. All fish canned in Pago Pago (an American Territory) is free of local tax and, being of American origin, the food enters the United States without tax penalty. The enterprise we tried to found in Fiji had none of these advantages."

Mr. Gatty thinks that tuna fishing in the future will use more mechanization. Two American tuna-fishing boats, working out of Hawaii, had each a crew of only six men—the little vessels were mechanized to do the work done on other boats by 35 Japanese.

Gatty believes that the Japanese will be the first to exploit this great wealth of fish food. Before World War II there were 7 million Japanese fishermen—because of the crowded character of their small country, they simply had to go out and get what they could out of the sea.

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# The GLOBE

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**Azores.**—Total Azores canned tuna exports to the United States in 1954 amounted to 1,272,257 pounds, valued at US$302,388, reports a U.S. consular dispatch from Ponta Delgada. This was an increase of 31% in volume and 35% in value as compared with 1953 canned tuna exports to the United States of 972,017 pounds, valued at US$233,398. Also in 1953 the Azores exported to the United States 660,000 pounds of frozen tuna, valued at US$92,000, but none was exported in 1954.

**Germany.**—A law recently passed in Germany authorizes the Federal Minister of Food and Agriculture to set up annually a supply plan determining the quantities of fish available from domestic deep-sea fishing, and the quantities to be imported. The new law also provides for the establishment of an advisory board of representatives from the Federal Government, the fishing industry, and the consumers to assist the Minister in implementing the marketing law.

**Indian Ocean.**—The master of the Japanese fishery training vessel Shunkotsu Maru reported that the Indian Ocean to the northeast of Madagascar abounds in yellowfin tuna and offers excellent opportunities for Japanese fishermen provided a base nearer than Japan could be used. This and other vessels have been making cruises in the Indian Ocean which included exploratory searches for new fishing grounds. It may be part of the effort to arrange for a joint Ceylonese-Japanese fishing corporation, which has been widely discussed.

**Japan.**—The Japanese fisheries generally experienced a prosperous year in 1954, according to a January 10, 1955, U.S. Embassy dispatch from Tokyo. In respect to foreign trade, a ready market was met for most products—squid and cuttlefish for Asiatic countries, salmon for sterling areas, and crab meat for the United States all recorded increased volume of shipments. Over-all exports of marine products for the year, based on 11-months data, were expected to amount to 140,000 metric tons, valued at US$74.8 million, compared with 1953 shipments of 121,000 tons, declared as worth US$60.7 million dollars. A substantial portion of this export business was with the United States and consisted largely of canned and frozen tuna.

**Japan.**—The captain of the Japanese tuna vessel Kasima Maru reports he found the Coral Sea teeming with tuna and caught five metric tons in a few days 600 miles ENE of Brisbane, Australia. He expressed surprise that an Australian official tuna survey in the Coral Sea had recently shown poor results. The Kasima Maru had put in to Brisbane for engine repairs.

**Mexico.**—A tuna canning plant set up with joint United States-Mexican capital may be established in Tampico or Matamoros, Mexico, to exploit new tuna resources recently located in the Gulf of Mexico, states a U.S. Embassy dispatch from Mexico City.

**Newfoundland.**—The 1954 fishing year in Newfoundland was one of development, change, and experimentation in the fishing industry, a U.S. consular dispatch from St. John's points out. Frozen groundfish production in Newfoundland during 1954 was the greatest on record with a yield of about 53 million pounds, an increase of 54% over the previous year. A 15-million-pound increase in cod yield accounted for most of the gain. This increase in the frozen fish industry is chiefly attributed to the increase in United States demand for fish sticks and for fish in frozen-block form. Several new freezing plants were put into operation during 1954, and Newfoundland's fishing capacity was increased by the addition of seven vessels to the offshore fishing fleet.

**Norway.**—The Norwegian 1955 winter herring season officially ended on February 13 and produced a total catch provisionally set at 713,227 metric tons, with an ex-vessel value of US$19 million, second only to the 1954 catch. The final figure for the 1954 catch was 872,426 metric tons, valued at over US$25 million.

**Portugal.**—The increase in Portugal's exports of canned fish was accompanied by considerable change in the structure of its markets during 1954. During January-October 1954 Germany was the leading receiver with 108.4 million escudos or US$3.7 million of canned fish (principally sardines), followed by Great Britain with 97.8 million escudos or US$3.4 million (principally sardines), Italy with 88.8 million escudos or US$3.1 million, and the United States with 77.3 million escudos or US$2.7 million (principally 1,774 tons of sardines in oil or sauce, 13 tons of tuna and tuna-like fish in oil, and 1.703 tons of anchovies).

**Spain.**—A run of striped tuna along the Bay of Biscay in Spain was at record levels last fall. According to U.S. consular dispatch from Bilbao, the total 1954 catch was the highest in history.

**Venezuela.**—Fish canners have been sending samples of their products to Africa, Germany and Trinidad, with the expectation of developing sales in those places. The President of the Venezuelan Fish Canners' Association said the stocks of unsold canned fish in Venezuela continue to increase but he is optimistic the problem will be solved with the help of the Foreign Office.

# Study Chinook Salmon

An environmental research study into the feeding and migration habits of fall chinook salmon has been started by the Washington Department of Fisheries on the Deschutes River.

Under the supervision of the chief biologist, the research staff will attempt to pinpoint the movement of both juvenile and adult chinooks between the Main River and Budd Inlet, with special attention to holdup periods in Deschutes Lake and rate of progress through the fishway system at Tumwater Falls. The project is roughly parallel to the type of migrant and stream production studies conducted at Minter Creek. Assessment also will be made of the type and quantities of food organisms present in the river and lake during the juvenile feeding stage.

Traps already have been installed at the head of the falls and in Percival Creek, and others will be placed later at points in the lake.

Last October 2,700 chinooks were placed above the falls and the progeny of these spawners are now in their emergent stage or approaching it. Only a few fry have been captured to date, and the main outward migration is not expected until late spring.

In addition, the Department plans to release 1,000,000 marked chinook fingerling in the Deschutes from stock being reared at the Green River Salmon Hatchery. The latter has been the donor for the Deschutes since the run was artificially established several years ago.

One long-range objective of the project will be to measure feeding competition between species of salmon and the effect it has, if any, on the ability of the Deschutes and similar rivers to produce chinooks at a maximum level. To date only chinook salmon have been planted in the river or allowed to ascend the fishways, and this may have contributed to the high productiveness which has characterized the run. When other species are introduced, study data will enable the Department to better assess the effects of feeding competition and, if necessary, manipulate escapement to keep the populations in balance.

The study has area-wide importance since the Deschutes chinooks have proved to be the mainstay of the fall and winter "blackmouth" fishing season in lower and middle Puget Sound. It will be conducted by stream biologists with the assistance of the resident biologist for the Olympia area, and will continue for at least three years.

## Fishermen's Working Conditions

The Governing Body of the International Labor Organization, which is holding its 128th session in Geneva, Switzerland, approved on March 2 proposals for a study of fishermen's working conditions submitted earlier by a committee of law experts, according to a United Nations release made available by the FAWS Branch of Commercial Fisheries. It is agreed that the Governing Body would ask member governments whether they favor establishing international standards on the following points of interest to the fishing industry: age of admission to employment, medical examinations, working contracts, and accident insurance.


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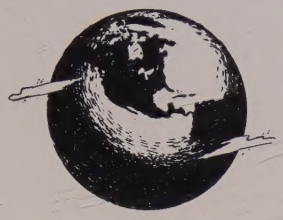
# INSURING THE PRESENT . . . AND THE FUTURE



As in the Past . . . So in the Future

All Activities of the American Tunaboat Association

Are Directed to the Improvement and Prosperity

of the Tuna Industry

*Wade Ambrose*
President

*Harold F. Cary*
General Manager

## AMERICAN TUNABOAT ASSOCIATION

No. 1 TUNA LANE • SAN DIEGO, CALIFORNIA

# 8 to 1

# you'll sell 'em!

Gambling? — not us. We know the facts. Surveys show that products with familiar brand names are preferred *eight times out of nine.* So just make sure which brands your customers want, and stock them. Makes sense, doesn't it?

Products with trusted brand names bring you many benefits: lower sales costs because they are so thoroughly pre-sold through their makers' powerful advertising and promotional material; fewer markdowns because of fast turnover; fewer adjustments because responsible manufacturers back up their products; best of all, lasting good will.

Yes, odds are 8 to 1 in your favor . . . and lots more's in your favor besides, when you stock the brands that sell the most.

* * *

How do YOU push the brands that boost your business? Your method could win you national attention and local prestige in the Brand Name Retailer-of-the-Year competition. Write for details.

**BRAND NAMES FOUNDATION**
INCORPORATED
A Non-Profit Educational Foundation
37 West 57 Street, New York 19, N.Y.

FOR THE BUSINESS YOU WANT, PROMOTE THE BRANDS THEY WANT